

U.S.-China Energy Performance Contracting: An Overview of 2015 Pilot Projects

Meredydd Evans, Senior Staff Scientist
Pacific Northwest National Laboratory

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Objectives of Recognizing Pilot Projects

- ▶ Test innovative business models and gain real-world experience in U.S. and Chinese markets.
 - Key project elements: contract models, financing methods, and M&V protocols.
- ▶ Identify best practices and expand to both markets.
- ▶ Foster deep energy savings.



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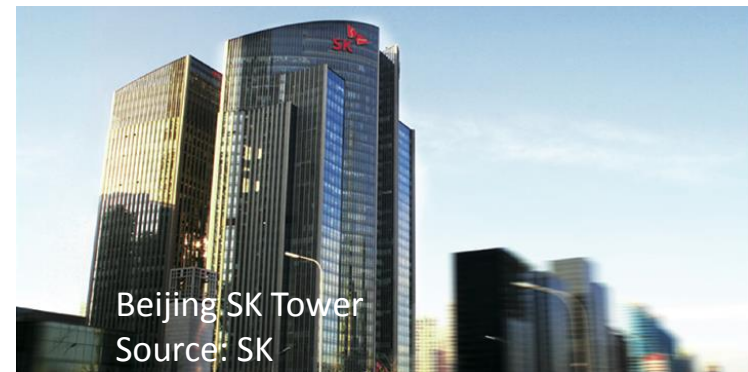


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EPC Pilot Projects in 2015

- ▶ 3 pilot projects received EEF recognition in 2015: Shenzhen Center for Disease Control and Prevention (CDC), Beijing SK Tower, and Tianjin Yujiabao Smart City.



- ▶ There are some additional EPC projects recognized by EMCA that are noteworthy.

Shenzhen Center for Disease Control and Prevention (CDC)

Public building
41,800 m² of floorspace
7.22 million KWh/year of energy use

Participants: Coolead (ESCO), JCI (supplier), Pudong Development Bank (financer)
Contract: shared savings with 8-year term
Financing: bank loan and ESCO capital*
M&V: metering
Other: 1. working group helped connect Coolead with JCI; 2. an on-site ESCO office for O&M efficiency

4.92 million KWh/year of energy use (32% reduction*, ~ 1,470 Mt(CO₂) reduction)
¥1.8 million (~\$289,000)/year of economic return
Recognized by Chinese government as demonstration EE public facility

Beijing SK Tower

Landmark commercial building
106,000 m² of floorspace
17.0 million KWh/year of energy use

Participants: JCI (ESCO and supplier), MayAir China (supplier)

Contract: guaranteed savings

Financing: self-funded by host

M&V: IPMVP

Other: improved indoor air quality

8.67 million KWh/Jan-Jul* of energy use (14% reduction*, ~ 1,264 Mt(CO₂) reduction*)

¥4.4 million (~\$706,000)/year of economic return

Host received government incentives for high energy efficiency and good indoor air quality of the building

Tianjin Yujiabao Smart City

Public infrastructure
First APEC Low-Carbon Town in China
914,000 KWh/year of energy use*

Participants: Tianjin Hainatiancheng (ESCO, supplier, and financier), Current by GE (supplier)

Contract: energy service agreement

Financing: public-private partnership*

M&V: metering and calculation

Other: smart city management and control system through smart street lights

447,774 KWh/year of energy use (51% reduction, ~ 420 Mt(CO₂) reduction)

Summary

Project	Shenzhen CDC	Beijing SK Tower	Tianjin Yujiabao
Sector	Public building	Commercial building	Public infrastructure
Contract	Shared savings	Guaranteed savings	Energy service agreement
Financing	Bank loan & ESCO capital	Self-funded by host	PPP leveraging Smart City Special Fund
Investment	¥4.39 million (~\$0.705 million)	¥24.4 million (~\$3.92 million)	¥200 million (~\$32.1 million)
Energy Savings	2.3 million KWh 32%	1.37 million KWh (Jan – Jul) 14% (Jan – Jul)	0.466 million KWh 51%
Emissions Reduction	1,470 Mt(CO ₂)	1,264 Mt(CO ₂)	420 Mt(CO ₂)
Innovations	<ol style="list-style-type: none"> 1. Higher savings than estimated 2. WG's matchmaking 3. O&M efficiency 4. Chinese govt recognition 	<ol style="list-style-type: none"> 1. IPMVP 2. Landmark building 3. IAQ improvement 4. Host received govt incentives for energy efficiency and IAQ 	<ol style="list-style-type: none"> 1. Public infrastructure 2. Energy service agreement contract 3. PPP financing 4. Significant investment & energy savings rate



Lessons Learned and Recommendations

- ▶ Incentivize diverse contract models to evenly distribute risks and relieve ESCOs from heavy financial burdens.
 - ❑ E.g. Develop policy incentives for guaranteed savings model.
- ▶ Increase project access to various financing methods and opportunities.
- ▶ Promote the utilization of international M&V protocols in China.
 - ❑ E.g. IPMVP.
- ▶ Encourage the participation of real estate industry for more project opportunities, and conduct matchmaking activities among potential hosts, ESCOs, suppliers, and financiers.
- ▶ Develop policy instruments to support EPC scale-up.

Thank you!

Meredydd Evans
Senior Staff Scientist
Joint Global Change Institute
Pacific Northwest National Laboratory

Email: m.evans@pnnl.gov